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# Effect of Bromination on Quorum Sensing Inhibition of Indole Carboxaldehydes

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*Effect of Bromination on Quorum Sensing Inhibition  
of Indole Carboxaldehydes*

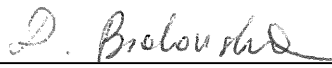
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Bachelor of Science in Biology  
with Honors

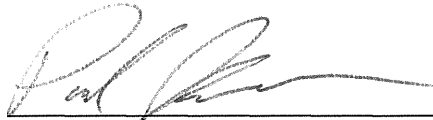
Chesley Anne Kemp

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Accepted by the Honors Faculty  
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Effect of Bromination on Quorum Sensing Inhibition of Indole Carboxaldehydes  
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Abstract

Quorum sensing is a form of bacterial communication that regulates group behaviors such as biofilm formation and production of virulence factors. As a result, inhibition of quorum sensing may prevent activation of pathogenesis in a number of bacterial species. Indoles are a type of signaling molecule found in many bacterial species and the indole derivative indole-3-carboxaldehyde has been found to inhibit quorum sensing mediated behaviors in *Escherichia coli*. Bromination may be a way to increase quorum sensing inhibiting properties of indole carboxaldehydes. The  $IC_{50}$ s of three monobrominated indole carboxaldehydes were determined and compared to the  $IC_{50}$  of indole-3-carboxaldehyde.  $IC_{50}$ s of all three test compounds were significantly decreased from the control. There was not a significant difference between different bromination patterns, although two compounds showed a trend towards a reduced  $IC_{50}$  when compared to the third compound.